

**REMARKS**

Claims 1-23 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 16 and 17 to overcome the rejections under 35 U.S.C. § 112, second paragraph.

**Preliminary Matters**

Applicant respectfully requests the Examiner to initial and return the form PTO/SB/08 A& B submitted with the Information Disclosure Statement filed April 30, 2004.

**Claim Rejections under 35 U.S.C. § 112**

The Examiner rejected claims 16 and 17 under 35 U.S.C. § 112, second paragraph. Applicant thanks the Examiner for pointing out, with particularity, the aspects of the claims thought to be indefinite. Applicant respectfully requests the Examiner to withdraw this rejection in view of the self-explanatory claim amendments being made herein.

**Claim Rejections under 35 U.S.C. § 101**

The Examiner maintained the rejection of claims 1-16 as being directed to a non-statutory subject matter. In addition, the previously added claims 17-23 stand rejected for similar reasons.

The Examiner appears to take the position that data structures are *per se* non-statutory subject matter (page 3 of the Office Action). The Examiner supports his position by alleging that the data structures are neither physical things nor statutory processes. In addition, the Examiner alleges that none of the claims recite a physical thing such as an apparatus or a computer

readable medium (page 2 of the Office Action). The Examiner does not support his position with any legal authority.

As a preliminary matter, Applicant respectfully incorporates by reference the arguments submitted in the Amendment under 37 C.F.R. § 1.111 filed on February 17, 2004.

In addition, Applicant respectfully directs the Examiner's attention to claim 15, which recites a "computer readable means having a computer program recorded thereon." Clearly, claim 15 recites "a physical thing", MPEP § 2106, IV(B). Thus, the rejection of this claim is improper as it is presented in the precise form mentioned as statutory by the Examiner. For at least this exemplary reason, it is appropriate and necessary for the Examiner to withdraw this rejection of claim 15.

Turning to the merits of the Examiner's position, Applicant respectfully disagrees. Applicant turns to various legal authorities to analyze the Examiner's position. According to 35 U.S.C. § 101, to obtain a patent, an Applicant must establish that the subject matter of the invention falls within one of the four statutory categories: a new use of a known process, machine, manufacture, composition of matter, or material. This section was interpreted by the Supreme Court in *Diamond v. Chakrabarty*, 447 U.S. 303, 308-309; 206 USPQ 193, 197 (1980), as a patent may be obtained for "anything under the sun that is made by man."

In the present case, claims 1-6 are directed to "a telecommunication signal frame" and may be classified as an article of manufacture. Claims 7-15, on the other hand, are directed to "a method for optimizing the time management of the information," and may be classified as a process. Claim 16 is directed to "a transmission apparatus comprising a processor, and a

memory” and may be classified as a machine. Claims 17-23 are directed to “a method of communicating using a transmission frame.” Each of these various claims are addressed below in their respective class classification.

#### *Articles of Manufacture*

The Examiner alleges that a transmission frame is not a physical thing but a data structure, and that data structures are unpatentable *per se*. Data structures are not unpatentable *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361-1362; 31 USPQ2d 1754, 1760 (Fed. Cir. 1994), indicated that in order to determine whether a data structure is within the statutory subject matter of 35 U.S.C. § 101, the utility of the claims need to be evaluated. *In re Lowry*, 32 F.3d. 1579, 1581-82, 32 USPQ2d 1031, 1033-34 (Fed. Cir. 1994), illustrates one of many statutory ways of claiming a data structure. In particular, a data structure stored in memory is an article of manufacture. *Id.*

The Examiner also alleges that the transmission frame is not a physical thing. To begin, this test has been criticized in *AT & T Corp. v. Excel Communs., Inc.*, 172 F.3d 1352, 1358-59; 50 USPQ2d 1447, 1454 (Fed. Cir. 1999). In particular, the Federal Circuit notes that claiming a physical thing is not an invariable requirement, but merely one example of how a mathematical algorithm may bring about a useful application. The court further noted that “when [a claimed invention] is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101.” As a result, when examining whether claims are within the statutory requirement, the Examiner should classify the claim using the definitions (*e.g.*, an article of

manufacture is the production of articles for use from raw or prepared materials by giving these materials new forms, qualities, properties, or combination) and examine if the claim has a practical application in the technological arts, MPEP § 2106 IV. For example, in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F.3d 1368, 1373; 47 USPQ2d 1596, 1601 (Fed. Cir. 1998), the Federal Circuit confirmed that transforming discrete dollar amounts into a final share price is a practical application.

Applying the above described principles, a frame is a container holding digital information, *see* Amendment under 37 C.F.R. § 1.111 filed on February 17, 2004. The frame may serve as a protection mechanism and the control mechanism for the data. Protection structures clearly have a practical application in the technology. Similarly, control mechanisms also have a practical application in the technology. That is, a frame produces a useful, concrete and tangible result. That is, the frame serves to ensure the protection of data and that the data arrives at the designated location.

Moreover, Applicant respectfully submits that a transmission frame is an intangible physical thing. For example, signals are physical objects even though they might be intangible, *see Id.* at 1358, 50 USPQ2d at 1454. Similarly, waveform data samples are an intangible physical thing, *In re Alappat*, 33 F.3d 1526, 1542-44; 31 USPQ2d 1545, 1555-57 (Fed. Cir. 1994). The statute does not include requirements as to the article of manufacture being tangible and visible. Such a reading would make all vapor and gas compositions unpatentable per se. This is clearly not the law. For at least these exemplary reasons, Applicant respectfully submits

that claims 1-6 are directed to the statutory subject matter, and it is appropriate and necessary for the Examiner to withdraw this rejection of claims 1-6.

*Processes*

Next, Applicant respectfully addresses this rejection of the process claims 7-15 and 17-23. In particular, claims 7-15 are directed to a method of optimizing the time management of the transmitted information and claims 17-23 are directed to a method of communication using a transmission frame. Applicant respectfully submits that such processes are clearly within the ambit of statutory subject matter.

A process can be a mode of treatment of certain materials to produce a given result. As quoted in *Gottschalk v. Benson*, 409 U.S. 63, 70; 175 USPQ 673 (1972), “that a process may be patentable, irrespective of the particular form of the instrumentalities used cannot be disputed.” Moreover, the “physical thing” analysis cited by the Examiner is of little value to the inquiry concerning process claims. The mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it a non-statutory subject matter, unless, of course, its operation does not produce a “useful, concrete and tangible result,” *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557. In other words, transforming data from one form to another can be a statutory process, *see e.g., Arrhythmia Research Tech. Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1060; 22 USPQ2d 1033, 1039 (Fed. Cir. 1992).

For example, in *AT & T Corp. v. Excel Communs., Inc.* 172 F.3d 1352, 50 USPQ2d, 1447 (CAFC 1999), the court affirmed that a method for producing message record for long distance

telephone calls is patentable subject matter under 35 U.S.C. § 101 even though the method uses values derived using simple Boolean mathematical principles since plaintiff's patent does not claim merely the Boolean principals used and since values generated represent useful, non-abstract results that facilitates differential billing of telephone calls made by subscribers to a long distance carrier; the court reversed the district court's judgment granting the defendant summary judgment of noninfringement for patent invalidity.

Moreover, MPEP § 2106 provides some examples of statutory processes. For example, "a computerized method of optimally controlling transfer, storage and retrieval of data between the cache and the hard disk storage devices such that the most frequently used data is readily available." Similarly, "a method for optimizing the time management information", and "a method of communication using frames" are within the statutory subject matter as they produce useful, non-abstract results. In particular, they produce a digital signal having information protected in a container and controlled by the container.

The Examiner alleges that the claims do not recite physical things nor are acts being performed (see page 2 of the Office Action). As explained above, with respect to the process claims, "physical things" are irrelevant and is not the criteria for evaluating whether the process is within the statutory subject matter. Next, Applicant respectfully points out that the claims do recite acts being performed. In particular, claim 7 recites: "arranging bits of a third byte...". Clearly this is an act performed by a machine (a person cannot perform such tasks since the physical thing is intangible). Similarly, claim 17 recites: "producing said transmission frame," which is also an act performed by the machine. For at least these exemplary reasons, claims 7-

15 and 17-23 are statutory subject matters. Therefore, it is appropriate and necessary for the Examiner to withdraw this rejection of claims 7-15 and 17-23.

*Machine*


With respect to claim 16, it recites a transmission apparatus comprising a memory and a processor. Clearly such a machine is the statutory matter. For at least, this exemplary reason, Applicant respectfully requests the Examiner to withdraw this rejection of claim 16.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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